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TALENTED STUDENT FROM CHAPPAQUA EMBRACES CHALLENGE TO EXCEL

Jiayi Peng to be Awarded $10,000 as a 2013 Davidson Fellow

Reno, Nev. – Twenty bright young people named as 2013 Davidson Fellows exemplify the extraordinary work that can be accomplished by U.S. students who are given opportunities to excel. One of these gifted students is 18-year-old Jiayi Peng of Chappaqua, N.Y.

Jiayi's science project is titled, "A Cellular Automaton Model for Critical Dynamics in Neuronal Networks." To better understand the complexity of the brain, Jiayi proposed a novel computer model that simulates the neural network while utilizing a simple feedback mechanism to show how neural networks can self-organize into a critical state. Her work has implications in Alzheimer's and epilepsy treatments.

The Davidson Fellows Scholarship program offers $50,000, $25,000 and $10,000 college scholarships to students 18 or younger, who have created significant projects that have the potential to benefit society in the fields of science, technology, engineering, mathematics, literature, philosophy and music. The Davidson Fellows Scholarship has provided more than $5.3 million in scholarship funds to 226 Fellows since its inception in 2001, and has been named one of the most prestigious undergraduate scholarships by *U.S. News & World Report*. The Davidson Fellows is a program of the Davidson Institute for Talent Development, a national nonprofit organization headquartered in Reno, Nev. that supports profoundly gifted youth.

"The Davidson Institute is built on the belief that individuals, who have extraordinary intelligence and talents, when encouraged and supported, can improve the quality of life for us all," said Bob Davidson, co-founder of the Davidson Institute. "We are delighted to recognize this group of resourceful and distinguished young people for their fascinating projects – projects that have the potential to benefit society."

The 2013 Davidson Fellows will be honored at a reception in Washington, D.C., on September 28, 2013.

Producing highly-qualified professionals, including scientists, engineers and entrepreneurs is critical to economic development in the United States. Public discourse on our nation's competitiveness tends to focus on the needs of low-performing students. As important to our country's future success are the most capable of students, such as the 2013 Davidson Fellows, who are reaching high levels of academic and innovative excellence and are strong examples of what students can achieve with the proper support.

About the Davidson Institute
Founded by Bob and Jan Davidson in 1999, the Davidson Institute for Talent Development recognizes, nurtures and supports profoundly intelligent young people, and provides opportunities for them to develop their talents to make a positive difference. For more information about the 2013 Davidson Fellows, please visit www.DavidsonGifted.org/Fellows.

2013 Davidson Fellow Laureates
$50,000 Scholarships

- **Miss Hannah Larson**, 18, Eugene, Ore.; *Classification of Some Fusion Categories of Rank 4*
- **Miss Samantha Marquez**, 17, Midlothian, Va.; *Celloidosomes®: A New Paradigm in the Bottom-up Assembly of Multicellular Architectures*

(MORE)

2013 Davidson Fellows

$25,000 Scholarships

- **Miss Ankita Ghoshal**, 18, Austin, Texas; *Sustainable 100w Portable Generators for 24/7/365 Power Demand*
- **Mr. Coleman Hughes**, 17, Montclair, N.J.; *The Rhythm of Free Expression: Honoring the Great Jazz Masters*
- **Mr. Harrison Li**, 15, Dix Hills, N.Y.; *Determining Interannual and Spatial Trends in Convective Frequency over the Northeastern United States Based on Reanalysis of Convective Parameters*
- **Miss Aashna Mago**, 17, Newtown, Pa.; *A Novel EZH2 Histone Methyltransferase Inhibitor: Potential Advancement in Epigenetic Cancer Therapy*
- **Miss Natalie Ng**, 17, Cupertino, Calif.; *MicroRNA Prognostic Signatures and Prediction Models for Distant Metastasis-Free Survival (DMFS) in Breast Cancer*
- **Miss Kailee Pedersen**, 17, Lincoln, Neb.; *The Transliteration of Flesh*
- **Miss Lilia Popova**, 18, Ann Arbor, Mich.; *Elucidating Environmental and Genetic Mechanisms of Magnetically Altered Plant Growth*
- **Mr. Thabit Pulak**, 17, Richardson, Texas; *Home-based Arsenic Bio-sane Water Filter and Rapid Arsenic Water Test using Nanotechnology*
- **Mr. David Steinberg**,16, Rancho Palos Verdes, Calif.; *The Pre-Shortzian Puzzle Project*

$10,000 Scholarships

- **Mr. Joshua Brakensiek**, 17, Phoenix, Ariz.; *Bounds on the Size of Sound Monotone Switching Networks Accepting Permutation Sets of Directed Trees*
- **Mr. Alec Brenner**, 18, McLean, Va.; *Viscoelastic Modeling of Tidal Heating in Terrestrial Exoplanets*
- **Mr. Michael Janner**, 17, Redlands, Calif.; *Magnetic Manipulation of Nanoscale Mirrors and Photonic Crystals*
- **Mr. Ajay Krishnan**, 17, Portland, Ore.; *Optimizing the Microbial Fuel Cell-Microbial Electrolysis Cell Coupled System for Sustainable Hydrogen Gas Production, Electricity Generation, and Improved Wastewater Treatment*
- **Mr. William Kuszmaul**, 17, Lexington, Mass.; *Equivalence Classes of Permutations Created Under Pattern-Replacement Relations*
- **Miss Emily Lipstein**, 17, Port Washington, N.Y.; *An Analysis of the Genetic Variation of Monachus monachus and Its Implications for Conservation*
- **Miss Jiayi Peng**, 18, Chappaqua, N.Y.; *A Cellular Automaton Model for Critical Dynamics in Neuronal Networks*
- **Mr. Vinay Sriram**, 17, Boyds, Md.; *Quantitative Modeling of Processing Cost and Energy Consumption for Cryptographically Enhanced Secure Internet Routing Protocol*
- **Mr. Vaibhav Vavilala**, 18, Indianapolis, Ind.; *Neural Networks: Raising the Storage Capacity*

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High-resolution photos are available at www.DavidsonGifted.org/Fellows.
Coordinate interview opportunities with the Davidson Fellows and their nominators by emailing DavidsonFellowsMedia@DavidsonGifted.org.